

B.E. Semester: VIII

Civil Engineering

Subject Name: DESIGN OF SPECIAL STRUCTURES-II (CV804-A)

A. Course Objective:

- To provide a coherent development to the students for the courses in sector of Designing of the Steel Structures.
- To present the Engineering concepts related Design of Steel Structures.
- To give an experience in the implementation of Engineering concepts which are applied in field of Steel Structures.
- To involve the application of scientific and technological principles of planning, analysis, design of buildings.

B. Teaching /Examination Scheme

Teaching scheme				Total Credit	Evaluation Scheme					Total
L	T	P	Total		Theory		Mid Sem Exam	CIA	Pract/ Tut.	
Hrs	Hrs	Hrs	Hrs		Hrs	Marks	Marks	Marks	Marks	
03	02	00	05	05	03	70	30	20	30	150

C. Detailed Syllabus:

MODULE – I Steel Structure Design

UNIT-I Design of Industrial Building

- Structural layout of industrial building
- design of various systems like roofing system, bracing system, columns, gantry girder etc.

UNIT-II Design of Steel Bridges

- Design of bolted / welded plate girder for static and rolling loads, design of supporting systems (For Heavy and Public Traffic)
- Design Structural System for Through & Deck Type of Truss Bridges

UNIT-III Introduction to Transmission Tower

D. Lesson Planning

Unit no	Title of the Unit	Minimum	Weightage
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		Hours	(%)
I	Design of Industrial Building	20	42
II	Design of Steel Bridges	20	42
III	Introduction to Transmission Tower	05	16
TOTAL		45	100

E. List of Tutorial

Sr. No	Analysis, design and detailing of following structures any two
1	Design and Detailing of Industrial Building
2	Design and Detailing of Steel Bridges
3	Design and detailing of any other steel structure

F. Instructional method and pedagogy (Continuous Internal Assessment Scheme) (CIA)

- At the start of course, the course delivery pattern, prerequisite of the subject will be discussed.
- Lecture may be conducted with the aid of multi-media projector, black board, OHP etc.
- Attendance is compulsory in lectures and practical which carries marks.
- At regular intervals assignments will be given. Students should submit all assignments during given period.
- Classroom participation and involvement in solving the problems in Tutorial rooms carries marks
- Internal exam of 30 marks will be conducted as a part of mid semester evaluation.
- Experiments shall be performed in the field related to course contents.
- The course includes a practical, where students have an opportunity to build an appreciation for the concept being taught in lectures.

G. Students Learning Outcomes:

- The students will gain an experience in the implementation of Design of Steel Structures on engineering concepts which are applied in field Structural Engineering.
- The students will get a diverse knowledge of Design of Steel engineering practices applied to real life problems
- The students will learn to understand the theoretical and practical aspects of Design of Steel Structure along with the planning and design aspects.

H. Term Work

- Analysis, Designing and Detailing of Industrial Building
- Analysis, Designing and Detailing of Steel bridge
- Analysis, Designing and Detailing of any other special steel structure

I. Recommended Study Materials

Reference Books and IS Codes:

- 1) IS: 800 - 2007, Code of Practice for General Construction in Steel, BIS, New Delhi.
- 2) 8. IS: 800 - 1984, Code of Practice for General Construction in Steel, BIS, New Delhi..
- 3) N.Subramanian; Steel Structures, Oxford Publication
- 4) K. S. Sai Ram; Design of Steel Structures, Pearson
- 5) Arya & Ajmani; Design of Steel Structures
- 6) Dayaratnam ; Design of Steel Structures
- 7) B.C.Punamia; Steel Structures, Laxmi Publication